

REMARKS

This Amendment is responsive to the final Office Action mailed on January 3, 2005. Claims 1, 11, 12, and 15-17 are amended. Claims 9, 10, 18-34 are cancelled. Claims 1-8 and 11-17 are pending.

As a preliminary matter, Applicants would like to thank the Examiner for the courteous and productive telephone interview conducted on March 10, 2005, and to thank the Examiner's Supervisor, Thomas Denion, for the follow up interview which took place on March 14, 2005, details of which are set forth below.

The Examiner has rejected Claims 1-34 under 35 U.S.C. 103(a) as being unpatentable over Itoh (U.S. 6,725,651) in view of Geyer (US 6,378,515).

Applicants respectfully traverse these rejections in view of the amended claims and the following comments.

Discussion of Examiner Interviews

On March 10, 2005, Applicants conducted a telephone interview with the Examiner. Applicant's undersigned counsel and one of the inventors of the present invention, Mr. Theodore J. Tarabulski, participated in the telephone interview with the Examiner.

During the telephone interview, Applicants discussed the differences between the present invention as set forth in claims 1 and 10 and the disclosure of the Itoh and Geyer references. In particular, Applicants discussed that Itoh did not disclose temporary use of a NOx sensor, and Geyer was limited to developing an EGR control strategy using a dynamometer. It was further discussed that Applicants' invention, as set forth in claim 10, was directed towards development of the injection strategy by normal operation of a vehicle, which enabled the present invention to be used to retro-fit existing vehicles with NOx reduction systems at a low cost. It was further discussed how the advantages provided by the Applicants' claimed invention were not provided by the systems of Itoh and Geyer.

Applicants indicated that they would be willing to amend claim 1 to include the subject matter of claim 10 in order to overcome the cited references. The Examiner agreed to discuss this matter with her supervisor and conduct a further telephone interview on March 14, 2005.

A follow up interview was held on Monday, March 14, 2005 with the Examiner's supervisor, Thomas Denion, Applicant's undersigned counsel, and Mr. Tarabulski. During this interview, the arguments presented to the Examiner during the March 10, 2005 interview were reiterated. During this follow-up interview, Supervisory Examiner Denion agreed that amendments to claim 1 which limited the method to use on a vehicle, rather than merely an engine alone, would serve to distinguish claim 1 over the Itoh and Geyer references. Supervisory Examiner Denion suggested certain amendments to claim 1. Claim 1 is amended herein along the lines suggested by the Supervisory Examiner Denion, and which include the addition of subject matter of claim 10 into claim 1. Supervisory Examiner Denion indicated that such amendments presented in an Amendment After Final would be entered.

Discussion of Claim Amendments

Claim 1 is amended along the lines discussed with Supervisory Examiner Denion, in order to distinguish over the Itoh and Geyer references as agreed. In particular, claim 1 is amended to include the subject matter of claim 10. Claim 10 is cancelled.

Claims 11 and 12 are amended to depend from claim 1.

Claims 15, 16, and 17 are amended herein to conform to the amendments made to claim 1 by Applicants' prior amendment filed on September 24, 2004.

Claims 9, and 18-34 are also cancelled.

Discussion of Declarations under 37 C.F.R. § 1.132 Submitted Herewith

Supervisory Examiner Denion indicated during the telephone interview that a Declaration from the inventor regarding the commercial success of the invention, in connection with the discussed claim amendments, would serve to overcome the cited references. A Declaration from Mr. Tarabulski is submitted herewith, along with a Declaration from Rod Radovanovic, an independent consultant for Combustion Components Associates, Inc., the assignee of the present

invention. The attached Declarations support the arguments made to the Examiner and Supervisory Examiner Denion during the telephone interviews.

In particular, the attached Declarations establish that the present invention has been successfully implemented, produces substantial reductions in NOx emissions, has been warmly received in the field, is a commercial success, has generated substantial revenues for assignee Combustion Components Associates, Inc., solves numerous cost and reliability issues associated with prior art systems, and provides numerous advantages over prior art systems.

Further, as set forth in the attached Declarations, Applicants' claimed system can be easily retrofitted on a vehicle at lower costs. Once the injection strategy has been developed as a result of the data collected with the temporary NOx detector in normal operation of the vehicle, the temporary NOx detector can be removed from the system. The NOx detector can then be temporarily installed on another vehicle to develop an injection strategy for that vehicle, thereby obviating the need to purchase separate and expensive NOx detectors for each vehicle in a fleet. The present invention allows for the retrofitting of a catalyst reduction system to existing vehicles without extensive downtime, engine removal, dynamometer tests, or long transport to engine test facilities. Such a benefit is magnified when applied to a fleet of vehicles owned by the same company.

Additionally, by providing a temporary NOx detector that is removed from the vehicle once the injection strategy is developed, the expensive, difficult to install and unreliable NOx detector cannot play a role in failure rates within the emissions reduction system, thereby reducing future costs associated with repair and maintenance. Further, by developing the reagent injection strategy during normal use of the vehicle for its intended purpose, higher NOx reduction is achieved as compared to that achieved using injection strategies developed on an engine removed from a vehicle and placed on a dynamometer.

As discussed with the Examiner and Supervisory Examiner Denion, the systems of Itoh and Geyer do not provide any of the aforesaid advantages. For example, with the system of the Itoh, each vehicle requires its own NOx sensor, increasing expense for owners of multiple vehicles. Further, since in Itoh the sensor is a permanent part of the system, failure rates and resulting repair costs will be increased. As discussed with the Examiner and Supervisory

Examiner Denion, Geyer discloses only an EGR control strategy developed on an engine on a dynamometer, and does not disclose developing an injection strategy for injection of a NOx reduction reagent through normal use of the vehicle.

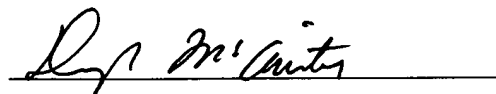
Applicants respectfully submit that the present invention is would not have been obvious to one skilled in the art in view of Itoh and Geyer, or any of the other prior art of record.

Further remarks regarding the asserted relationship between Applicant's claims and the prior art are not deemed necessary, in view of the amended claims, the foregoing discussion, and the agreement reached with Supervisory Examiner Denion. Applicants' silence as to any of the Examiner's comments is not indicative of an acquiescence to the stated grounds of rejection.

Conclusion

In view of the above, entry of the present amendment and reconsideration and allowance of each of the claims is respectfully requested. If there are any remaining issues that need to be addressed in order to place this application into condition for allowance, the Examiner is requested to telephone Applicant's undersigned attorney.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Douglas M. McAllister", is written over a horizontal line.

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